REMARKS

In response to the rejection of claims 1-4 and 9-12 under 35 USC 102 as being anticipated by US Patent Publication No. 2002/0109701 to Deering ("Deering"), the rejection of claim 5 under 35 USC 103 as being unpatentable over Deering in view of US Patent Publication No. 2001/0012018 to Hayhurst ("Hayhurst"), the rejection of claims 6-7 as being unpatentable over Deering and Hayhurst and further in view of US Patent No. 6,269,175 to Hanna et al. ("Hanna"), the rejection of claim 8 as being unpatentable over Deering, Hayhurst and further in view of US Patent Publication No. 20010036307 to Hanna et al. ("Hanna 2") and the rejection of claim 13 as being unpatentable over Deering and Hayhurst, Applicant respectfully disagrees and traverses the rejections for the reasons set forth below.

Claims 1-4 and 9-12

These claims have been rejected as being anticipated by Deering. However, a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Furthermore, "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). *See MPEP 2131*. In this case, claim elements of at least independent claims 1 and 9 are not found in Deering for the reasons set forth below and therefore the anticipation rejection of all of these claims is improper and should be withdrawn.

Claim 1

Claim 1 recites several claim elements that are not found in Deering.

Rasterizer Claim Element

Claim 1 recites "a rasterizer configured to traverse a surface grid over a surface of a primitive of a 3D image for all of the plurality of different views of said 3D image such that traversing is performed once for said 3D image" which is not found in Deering.

Deering discloses dynamic depth of field emulation system that has a rendering engine that can be used to generate a stereo video image. *See Deering at paragraph 0019*. Deering also discloses that video signals are generated from 3-D graphics data that may be primitives. *See Deering at paragraph 0050*. Deering also discloses a filtering engine 106 that generates video

output pixels from samples and that may scan through virtual screen space in raster fashion generating virtual pixel positions and generate a video output pixel at each of the virtual pixel positions. *See Deering at paragraph 0110.*

These disclosures in Deering cannot be interpreted to disclose the claim element. In particular, Deering does not disclose "a rasterizer configured to **traverse a surface grid** over a surface of a primitive of a 3D image **for all of the plurality of different views of said 3D image** such that **traversing is performed once for said 3D image**" In fact, there is no disclosure at all of this claim element in its entirety which must be disclosed in Deering and the identical invention is not shown in Deering in as complete detail as is contained in the ... claim so that the anticipation rejection of claim 1 based on Deering must be withdrawn for at least this reason.

Response to Final Office Action Arguments

In the final Office action, the examiner argues that "A raster fashion is a rasterization that is applied to a 3D image data, the data could be a stream of many different views of the 3D image through a computational pipeline to be rendered once" because Deering discloses "The rendering engine may send primitives through a computational pipeline (or partition the primitives among a number of parallel pipelines) to render the primitives in terms of samples." citing to Deering at paragraph 0020. This argument does not change the fact that this claim element is not found, expressly or inherently, in Deering.

The statement "A raster fashion is a rasterization that is applied to a 3D image data, the data could be a stream of many different views of the 3D image through a computational pipeline to be rendered once" is completely unsupported by any evidence or disclosure in a piece of prior art.

Furthermore, it does not make logical sense. While Applicant agrees that in a raster fashion is rasterization, it does not follow that "raster fashion" means rasterization applied to 3D image data nor that the rasterization is to a stream of many different views of the 3D image through a computational pipeline.

In addition, the argument does not meet the anticipation standard. The anticipation standard requires that the claim element is found, expressly or inherently, in Deering. The statement that data "could be a stream of many different views of the 3D image through a computational pipeline" is insufficient to show that this claim element is found in Deering.

Shader Unit Claim Element

Claim 1 also recites "a shader unit configured to determine a color of the output of the rasterizer and forward a shaded color sample along with its screen coordinates" which is not found in Deering.

The examiner asserts that the rendering engine in Deering is the claimed shader unit. *See Office action at pg. 3.* However, as shown in Figure 3 of Deering, the rendering engine 102 receives 3D graphics data to render sample data which is stored in the sample buffer 104 and then fed into the filtering engine 106. *See Deering at Figure 3.* The examiner also asserts that the filtering engine 106 is the claimed rasterizer. *See Office action at pg. 3.* Thus, according to the examiner's interpretation of Deering, the claimed shader unit (the rendering engine of Deering) is feeding samples into the claimed rasterizer (the filtering engine of Deering) which is clearly contrary to the claim language which requires that the shader unit receives the output of the rasterizer. Thus, the claimed shader unit is also not found in Deering and the anticipation rejection of claim 1 based on Deering must be withdrawn for this additional reason.

Response to Final Office Action Arguments

The argument made by the examiner in the Final office action does not change the fact that this claim element is not found, expressly or inherently, in Deering for at least two reasons.

First, the examiner did not respond substantively to the argument in the response. In fact, the examiner still maintains that the renderer unit in Deering is the claimed shader unit (as in the first office action) which means that the examiner's interpretation of Deering is that the claimed shader unit (the rendering engine of Deering) is feeding samples into the claimed rasterizer (the filtering engine of Deering) which is clearly contrary to the claim language which requires that the shader unit receives the output of the rasterizer.

Second, the examiner's citations in Deering are not persuasive. Although the samples in Deering can be interpreted as screen coordinates and the rendering engine computes color information (See Deering at 0056 and 0027 cited by the examiner) as argued by the examiner, the fact still remains that the examiner's interpretation of Deering is that the claimed shader unit (the rendering engine of Deering) is feeding samples into the claimed rasterizer (the filtering engine of Deering) which is clearly contrary to the claim language which requires that the shader unit receives the output of the rasterizer.

Plurality of Space Resampler Claim Element

Claim 1 also recites "a plurality of screen space resamplers, each of said screen space resamplers being configured to resample the shaded color sample determined by said shader unit according to one of the plurality of different views such that resampling is performed a plurality of times in parallel for said 3D image" which is not found in Deering. While Deering discloses that supersamples are generated and that a blur value is determined for each sample (supported by the portions of Deering cited by the examiner), Deering does not disclose the plurality of screen space resamplers that resample the shaded color sample from the claimed shader unit (as required by the claim language) nor that the resampling is performed a plurality of times in parallel (as required by the claim language).

In fact, there is no disclosure at all of this claim element in its entirety which must be disclosed in Deering and the identical invention is not shown in Deering in as complete detail as is contained in the ... claim so that the anticipation rejection of claim 1 based on Deering must be withdrawn for at least this reason.

Summary

In summary, each claim element in its entirety is not found in Deering and the identical invention is not shown in Deering in as complete detail as is contained in the ... claim so that the anticipation rejection of claim 1 based on Deering must be withdrawn.

Claims 2-4

These claims depend from claim 1 and cannot properly be rejected as being anticipated by Deering for at least the same reasons as claim 1.

Claim 9

Claim 9 recites several claim elements that are not found in Deering.

Traversing Surface Grid Claim Element

Claim 9 recites "traversing a surface grid over a surface of a primitive of a 3D image for all the different plurality of views of said 3D image such that the traversing is performed once for said 3D image" which is not found in Deering.

Deering discloses dynamic depth of field emulation system that has a rendering engine that can be used to generate a stereo video image. *See Deering at paragraph 0019.* Deering also discloses that video signals are generated from 3-D graphics data that may be primitives. *See*

Deering at paragraph 0050. Deering also discloses a filtering engine 106 that generate video output pixels from samples and that may scan through virtual screen space in raster fashion generating virtual pixel positions and generate a video output pixel at each of the virtual pixel positions. *See Deering at paragraph 0110.*

These disclosures in Deering cannot be interpreted to disclose the claim element. In particular, Deering does not disclose "**traversing a surface grid** over a surface of a primitive of a 3D image **for all the different plurality of views of said 3D image** such that the **traversing is performed once for said 3D image.**" In fact, there is no disclosure at all of this claim element in its entirety which must be disclosed in Deering and the identical invention is not shown in Deering in as complete detail as is contained in the ... claim so that the anticipation rejection of claim 9 based on Deering must be withdrawn for at least this reason.

Response to Final Office Action Arguments

In the final Office action, the examiner argues that "A raster fashion is a rasterization that is applied to a 3D image data, the data could be a stream of many different views of the 3D image through a computational pipeline to be rendered once" because Deering discloses "The rendering engine may send primitives through a computational pipeline (or partition the primitives among a number of parallel pipelines) to render the primitives in terms of samples." citing to Deering at paragraph 0020. This argument does not change the fact that this claim element is not found, expressly or inherently, in Deering.

The statement "A raster fashion is a rasterization that is applied to a 3D image data, the data could be a stream of many different views of the 3D image through a computational pipeline to be rendered once" is completely unsupported by any evidence or disclosure in a piece of prior art.

Furthermore, it does not make logical sense. While Applicant agrees that in a raster fashion is rasterization, it does not follow that "raster fashion" means rasterization applied to 3D image data nor that the rasterization is to a stream of many different views of the 3D image through a computational pipeline.

In addition, the argument does not meet the anticipation standard. The anticipation standard requires that the claim element is found, expressly or inherently, in Deering. The

statement that data "could be a stream of many different views of the 3D image through a computational pipeline" is insufficient to show that this claim element is found in Deering.

<u>Determining a Color Claim Element</u>

Claim 9 also recites "determining a color of the output of the traversing and forwarding a shaded color sample along with its screen coordinates" which is not found in Deering.

The examiner asserts that the rendering engine in Deering is the claimed shader unit. *See Office action at pg. 3*. However, as shown in Figure 3 of Deering, the rendering engine 102 receives 3D graphics data to render sample data which is stored in the sample buffer 104 and then fed into the filtering engine 106. *See Deering at Figure 3*. The examiner also asserts that the filtering engine 106 is the claimed rasterizer. *See Office action at pg. 3*. Thus, according to the examiner's interpretation of Deering, the claimed shader unit (the rendering engine of Deering) is feeding samples into the claimed rasterizer (the filtering engine of Deering) which is clearly contrary to the claim language which requires "determining a color of the output of the traversing and forwarding a shaded color sample along with its screen coordinates." Thus, the claimed determining process is also not found in Deering and the anticipation rejection of claim 9 based on Deering must be withdrawn for this additional reason.

Response to Final Office Action Arguments

The argument made by the examiner in the Final office action does not change the fact that this claim element is not found, expressly or inherently, in Deering for at least two reasons.

First, the examiner did not respond substantively to the argument in the response. In fact, the examiner still maintains that the renderer unit in Deering is the claimed shader unit (as in the first office action) which means that the examiner's interpretation of Deering is that the claimed shader unit (the rendering engine of Deering) is feeding samples into the claimed rasterizer (the filtering engine of Deering) which is clearly contrary to the claim language which requires that the shader unit receives the output of the rasterizer.

Second, the examiner's citations in Deering are not persuasive. Although the samples in Deering can be interpreted as screen coordinates and the rendering engine computes color information (See Deering at 0056 and 0027 cited by the examiner) as argued by the examiner, the fact still remains that the examiner's interpretation of Deering is that the claimed shader unit (the rendering engine of Deering) is feeding samples into the claimed rasterizer (the filtering

engine of Deering) which is clearly contrary to the claim language which requires that the shader unit receives the output of the rasterizer.

Resampling Claim Element

Claim 9 also recites "resampling the shaded color sample for each of the N different views such that the resampling is performed a plurality of times in parallel for said 3D image" which is not found in Deering. While Deering discloses that supersamples are generated and that a blur value is determined for each sample (supported by the portions of Deering cited by the examiner), Deering does not disclose resampling the shaded color sample from the claimed shader unit (as required by the claim language) nor that the resampling is performed a plurality of times in parallel (as required by the claim language).

In fact, there is no disclosure at all of this claim element in its entirety which must be disclosed in Deering and the identical invention is not shown in Deering in as complete detail as is contained in the ... claim so that the anticipation rejection of claim 9 based on Deering must be withdrawn for at least this reason.

Summary

In summary, each claim element in its entirety is not found in Deering and the identical invention is not shown in Deering in as complete detail as is contained in the ... claim so that the anticipation rejection of claim 9 based on Deering must be withdrawn.

Claims 10-12

These claims depend from claim 9 and cannot properly be rejected as being anticipated by Deering for at least the same reasons as claim 9.

Claim 5

This claim depends from claim 1. Since each claim element of claim 1 is not found in Deering for the reasons set forth above, those claims elements are not found in claim 5 as well. In addition, Hayhurst does not contain the claim elements missing from Deering so that the combination of Deering and Hayhurst do not disclose or suggest each claim element of claim 5 and a prima facie case of obviousness of claim 5 has not been established and the rejection must be withdrawn.

Claims 6-7

These claims depend from claim 1. Since each claim element of claim 1 is not found in Deering for the reasons set forth above, those claims elements are not found in claims 6-7 as well. In addition, Hayhurst and Hanna do not contain the claim elements missing from Deering so that the combination of Deering, Hayhurst and Hanna do not disclose or suggest each claim element of claims 6-7 and a prima facie case of obviousness of claims 6-7 has not been established and the rejection must be withdrawn.

Claim 8

This claim depends from claim 1. Since each claim element of claim 1 is not found in Deering for the reasons set forth above, those claims elements are not found in claim 8 as well. In addition, Hayhurst and Hanna2 do not contain the claim elements missing from Deering so that the combination of Deering, Hayhurst and Hanna2 do not disclose or suggest each claim element of claim 8 and a prima facie case of obviousness of claim 8 has not been established and the rejection must be withdrawn.

Claim 13

This claim depends from claim 9. Since each claim element of claim 9 is not found in Deering for the reasons set forth above, those claims elements are not found in claim 13 as well. In addition, Hayhurst does not contain the claim elements missing from Deering so that the combination of Deering and Hayhurst do not disclose or suggest each claim element of claim 13 and a prima facie case of obviousness of claim 13 has not been established and the rejection must be withdrawn.

CONCLUSION

In view of the above, it is respectfully submitted that Claims 1-13 are allowable over the prior art cited by the Examiner and early allowance of these claims and the application is respectfully requested.

The Examiner is invited to call Applicant's attorney at the number below in order to speed the prosecution of this application.

The Commissioner is authorized to charge any deficiencies in fees and credit any overpayment of fees to Deposit Account No. 07-1896.

Respectfully submitted,

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